

WHAT IS CLAIMED IS:

1. A gas turbine comprising at least one compressor and  
5 at least one turbine, wherein one portion of air leaving the  
compressor is delivered to a combustion chamber and a further  
portion is extracted as cooling air, and further comprising a  
secondary air turbine, wherein at least one portion of the  
cooling air flow is directed through the secondary air turbine,  
10 in order to lower the temperature of the cooling air.

2. The gas turbine of claim 1, wherein a rotor of the  
secondary air turbine is secured to a high-pressure shaft of  
the gas turbine.  
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3. The gas turbine of claim 1, wherein the secondary air  
turbine is disposed below an inner housing of the combustion  
chamber.

4. The gas turbine of claim 3, wherein the secondary air  
turbine is embodied as a single-stage turbine.  
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5. The gas turbine of claim 4, wherein a rotor blading  
system of the secondary air turbine is embodied integrally with  
a component of the high-pressure shaft.  
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6. The gas turbine of claim 4, wherein a rotor blading  
system of the secondary air turbine is embodied as a separate  
component and is connected to the high-pressure shaft.  
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7. The gas turbine of claim 4, wherein a guide blading  
system of the secondary air turbine is embodied integrally with  
a component of the housing.

8. The gas turbine of claim 4, wherein a guide blading  
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system of the secondary air turbine is embodied as a separate component and is connected to the housing.

9. The gas turbine of claim 3, wherein the secondary air  
5 turbine is embodied as a 1½-stage turbine.

10. The gas turbine of claim 9, wherein a rotor blading  
system of the secondary air turbine is embodied integrally with  
a component of the high-pressure shaft.  
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11. The gas turbine of claim 9, wherein a rotor blading  
system of the secondary air turbine is embodied as a separate  
component and is connected to the high-pressure shaft.

12. The gas turbine of claim 9, wherein a guide blading  
system of the secondary air turbine is embodied integrally with  
a component of the housing.  
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13. The gas turbine of claim 9, wherein a guide blading  
system of the secondary air turbine is embodied as a separate  
component and is connected to the housing.  
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14. The gas turbine of claim 1, wherein the secondary air  
turbine is embodied as a single-stage turbine.  
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15. The gas turbine of claim 1, wherein a rotor blading  
system of the secondary air turbine is embodied integrally with  
a component of the high-pressure shaft.

16. The gas turbine of claim 1, wherein a rotor blading  
system of the secondary air turbine is embodied as a separate  
component and is connected to the high-pressure shaft.  
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17. The gas turbine of claim 1, wherein a guide blading  
system of the secondary air turbine is embodied integrally with  
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a component of the housing.

18. The gas turbine of claim 1, wherein a guide blading  
system of the secondary air turbine is embodied as a separate  
5 component and is connected to the housing.

19. The gas turbine of claim 1, wherein the secondary air  
turbine is embodied as a  $1\frac{1}{2}$ -stage turbine.

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